

Sauget Area 2 Site

EPA Region 5 Records Ctr.



163542

SOLUTIA

500 Mousanto Avenue
Sauget, Illinois 62206-1198
Tel: 618-482-6340
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facsimile transmittal

To: Nabil Fayoumi Fax: 312-353-5541

From: Richard Williams Date: October 7, 2004

Re: Chemical Analyses of Topsoil Sample Pages: 29

CC: Steve Smith

Urgent For Review Please Comment Please Reply Please Recycle

COMMENTS:

Nabil:

Attached are the results of chemical analyses performed on a sample of topsoil that Inquip has proposed to use to cover the exclusion zone on Site R. I apologize for not sending you a copy of these results at the same time that it was sent to CH2M Hill.

LETTER OF TRANSMITTAL



From: Richard Williams
500 Monsanto Avenue
Sauget, IL 62206-1198
(618) 482-6340 FAX (618) 482-8529

Mr. Chris English
CH2M Hill
727 North First Street
Suite 400
St. Louis, MO 63102

Date: October 4, 2004
Sauget Area 2 - GMCS

The following items are:

Enclosed Requested Sent Separately Via: _____

No. of Copies	Description
1	Analytical Report for tests performed a Topsoil Sample

The above items are submitted:

At your request For your review For your signature
 For your files For your action For your information

Comments:

This material is intended for use in constructing the 6 inch thick clean soil cover over the exclusion zone on the site. This cover is required by the approved design. We would appreciate your early review and approval.

By: Richard Williams *RW*

STL ST. LOUIS



STL

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel: 314 298 8566 Fax: 314 298 8757
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ANALYTICAL REPORT

PROJECT NO. IAI-7603-190

Solutia

Lot #: F4I170267

David G. Tesson

INQUIP Associates, Inc.
P.O. Box 1747
Cahokia, IL 62206

SEVERN TRENT LABORATORIES, INC.

MARTI WARD
Project Manager

September 24, 2004

CONFIDENTIAL

Severn Trent Laboratories, Inc.

Case Narrative

LOT NUMBER: F4I170267, F4I160145

This report contains the analytical results for the three samples received under chain of custody by STL St. Louis on September 16 and September 17, 2004. The samples are associated with your Solutia project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Semi-Volatiles

The LCS and MS/MSD recoveries are outside QC limits for less than 10% of the compounds spiked. Laboratory QC practices, based on federal guidance documents, allow for up to 10% of the spike compounds to be outside QC criteria without necessitating re-preparation/re-analysis. Sample extraction efficiency and compliance is demonstrated by the remaining acceptable LCS recoveries.

Affected Samples:

F4I170267 (1); EMTS 120,500ML BLACK

Herbicides

The MS/MSD RPD is not within method acceptance criteria for the compound "Dinoseb". A matrix interference is suspected in the sample. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:

F4I170267 (1); EMTS 120,500ML BLACK

Case Narrative
LOT NUMBER: F4I170267

Volatiles

The LCS recoveries are outside QC limits for less than 10% of the compounds spiked. Laboratory QC practices, based on federal guidance documents, allow for up to 10% of the spike compounds to be outside QC criteria without necessitating re-preparation/re-analysis. Sample purge efficiency and compliance is demonstrated by the remaining acceptable LCS recoveries. The Internal Standard recovery is low resulting in a positive bias for the target analytes associated with the Internal Standard. The MS/MSD internal standards recoveries were also low indicating matrix interference is present in the sample. The MS/MSD recovery for many analytes is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:

F4I170267 (1): EMTS 120,500ML BLACK
F4I160145 (1): BROWN
F4I160145 (2): GRAY

PCBs

The surrogate recovery is outside the upper QC limit, indicating a potential positive bias. There were no target analytes observed above the reporting limit in the sample; therefore the sample data was not adversely affected by this excursion.

Affected Samples:

F4I170267-(1)-EMTS 120,500ML-BLACK

Pesticides

Sample surrogate recovery is outside established upper QC limits. This excursion is attributed to a matrix interference which is physically evident in the sample. The sample was re-analyzed at a dilution to try to minimize the interference. Surrogates were diluted out. The MS/MSD recovery for heptachlor is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.

Affected Samples:

F4I170267 (1): EMTS 120,500ML BLACK

The MS/MSD recovery for several compounds is outside the established QC limits. Samples were re-prepared/reanalyzed outside holding time. The reanalysis yielded comparable results indicating a matrix effect. The original results, performed within hold time, are reported.

Affected Samples:

F4I160145 (1): BROWN
F4I160145 (2): GRAY

SAMPLE SUMMARY

F4I160145

<u>NO #</u>	<u>SAMPLE#</u>	<u>CLIENT</u>	<u>SAMPLE ID</u>	<u>SAMPLED</u>	<u>SAMP</u>
				<u>DATE</u>	<u>TIME</u>
GQCJB	001	BROWN		09/15/04	18:45
GQCKF	002	GRAY		09/15/04	19:00

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paper filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SAMPLE SUMMARY

F4I170267

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
GQGF4	001	EMTS 120,500ML BLACK	09/17/04	08:07

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint fiber test, pH, potosky pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F4I170267

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Chlorinated Herbicides by GC	SW846 8151A	SW846 8151A
Cyanide, Total	SW846 9012A	SW846 9012A
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Organochlorine Pesticides	SW846 8081A	SW846 3550
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
PCBs by SW-846 8082	SW846 8082	SW846 3550B/366
Semivolatile Organic Compounds by GC/MS	SW846 8270C	SW846 3550B
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B/826

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC/MS Volatiles

Lot-Sample #....: F4I170267-001 Work Order #....: GQGF41AA Matrix.....: SOLID
 Date Sampled....: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/21/04 Analysis Date...: 09/21/04
 Prep Batch #....: 4265463 Analysis Time...: 11:12
 Dilution Factor: 1
 % Moisture.....: 19 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Chloromethane	ND	12	ug/kg
Vinyl chloride	ND	6.2	ug/kg
Bromomethane	ND	12	ug/kg
Chloroethane	ND	12	ug/kg
Acetone	ND	25	ug/kg
1,1-Dichloroethene	ND	6.2	ug/kg
Methylene chloride	52	6.2	ug/kg
Carbon disulfide	ND	6.2	ug/kg
1,1-Dichloroethane	ND	6.2	ug/kg
2-Butanone	ND	25	ug/kg
1,2-Dichloroethene (total)	ND	12	ug/kg
Chloroform	ND	6.2	ug/kg
1,1,1-Trichloroethane	ND	6.2	ug/kg
Carbon tetrachloride	ND	6.2	ug/kg
1,2-Dichloroethane	ND	6.2	ug/kg
Benzene	ND	6.2	ug/kg
Trichloroethene	ND	6.2	ug/kg
1,2-Dichloropropane	ND	6.2	ug/kg
Bromodichloromethane	ND	6.2	ug/kg
4-Methyl-2-pentanone	ND	25	ug/kg
cis-1,3-Dichloropropene	ND	6.2	ug/kg
Toluene	ND	6.2	ug/kg
trans-1,3-Dichloropropene	ND	6.2	ug/kg
1,1,2-Trichloroethane	ND	6.2	ug/kg
2-Hexanone	ND	25	ug/kg
Tetrachloroethene	ND	6.2	ug/kg
Dibromochloromethane	ND	6.2	ug/kg
Chlorobenzene	ND	6.2	ug/kg
Ethylbenzene	ND	6.2	ug/kg
Xylenes (total)	ND	12	ug/kg
Styrene	ND	6.2	ug/kg
Bromoform	ND	6.2	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.2	ug/kg
1,2-Dichlorobenzene	ND	6.2	ug/kg
1,3-Dichlorobenzene	ND	6.2	ug/kg
1,4-Dichlorobenzene	ND	6.2	ug/kg

(Continued on next page)

INQUIP Associates, Inc.

Client Sample ID: ENTS 120,500ML BLACK

GC/MS Volatiles

Lot-Sample #...: F4I170267-001 Work Order #...: GQGF41AA Matrix.....: SOLID

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	107	(80 - 130)
Dibromofluoromethane	103	(78 - 130)
1,2-Dichloroethane-d4	100	(72 - 134)
4-Bromofluorobenzene	119	(68 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC/MS Semivolatiles

Lot-Sample #...: F4I170267-001 Work Order #...: GQGF41AC Matrix.....: SOLID
Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04
Prep Date.....: 09/20/04 Analysis Date...: 09/21/04
Prep Batch #...: 4264230 Analysis Time...: 19:41
Dilution Factor: 1
% Moisture.....: 19 Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Phenol	ND	410	ug/kg
bis(2-Chloroethyl)- ether	ND	410	ug/kg
2-Chlorophenol	ND	410	ug/kg
1,3-Dichlorobenzene	ND	410	ug/kg
1,4-Dichlorobenzene	ND	410	ug/kg
1,2-Dichlorobenzene	ND	410	ug/kg
2-Methylphenol	ND	410	ug/kg
2,2'-oxybis(1-Chloropropane)	ND	410	ug/kg
4-Methylphenol	ND	820	ug/kg
N-Nitrosodi-n-propyl- amine	ND	410	ug/kg
Hexachloroethane	ND	410	ug/kg
Nitrobenzene	ND	410	ug/kg
Isophorone	ND	410	ug/kg
2-Nitrophenol	ND	410	ug/kg
2,4-Dimethylphenol	ND	410	ug/kg
bis(2-Chloroethoxy) methane	ND	410	ug/kg
2,4-Dichlorophenol	ND	410	ug/kg
1,2,4-Trichloro- benzene	ND	410	ug/kg
Naphthalene	ND	410	ug/kg
4-Chloroaniline	ND	410	ug/kg
Hexachlorobutadiene	ND	410	ug/kg
4-Chloro-3-methylphenol	ND	410	ug/kg
2-Methylnaphthalene	ND	410	ug/kg
Hexachlorocyclopenta- diene	ND	2000	ug/kg
2,4,6-Trichloro- phenol	ND	410	ug/kg
2,4,5-Trichloro- phenol	ND	410	ug/kg
2-Chloronaphthalene	ND	410	ug/kg
2-Nitroaniline	ND	2000	ug/kg
Dimethyl phthalate	ND	410	ug/kg
Acenaphthylene	ND	410	ug/kg
2,6-Dinitrotoluene	ND	410	ug/kg

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INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC/MS Semivolatiles

Lot-Sample #...: F4I170267-001 Work Order #...: GQGF41AC Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
3-Nitroaniline	ND	2000	ug/kg
Acenaphthene	ND	410	ug/kg
2,4-Dinitrophenol	ND	2000	ug/kg
4-Nitrophenol	ND	2000	ug/kg
Dibenzofuran	ND	410	ug/kg
2,4-Dinitrotoluene	ND	410	ug/kg
Diethyl phthalate	ND	410	ug/kg
Fluorene	ND	410	ug/kg
4-Chlorophenyl phenyl ether	ND	410	ug/kg
4-Nitroaniline	ND	2000	ug/kg
4,6-Dinitro-2-methylphenol	ND	2000	ug/kg
N-Nitrosodiphenylamine	ND	410	ug/kg
4-Bromophenyl phenyl ether	ND	410	ug/kg
Hexachlorobenzene	ND	410	ug/kg
Pentachlorophenol	ND	2000	ug/kg
Phenanthrene	ND	410	ug/kg
Anthracene	ND	410	ug/kg
Carbazole	ND	410	ug/kg
Di-n-butyl phthalate	ND	410	ug/kg
Fluoranthene	170 J	410	ug/kg
Pyrene	130 J	410	ug/kg
Butyl benzyl phthalate	ND	410	ug/kg
Benzo (a) anthracene	90 J	410	ug/kg
3,3'-Dichlorobenzidine	ND	2000	ug/kg
Chrysene	180 J	410	ug/kg
bis(2-Ethylhexyl) phthalate	ND	410	ug/kg
Di-n-octyl phthalate	ND	410	ug/kg
Benzo (b) fluoranthene	120 J	410	ug/kg
Benzo (k) fluoranthene	95 J	410	ug/kg
Benzo (a) pyrene	86 J	410	ug/kg
Indeno (1,2,3-cd) pyrene	ND	410	ug/kg
Benzo (ghi) perylene	ND	410	ug/kg
Dibenzo (a, h) anthracene	ND	410	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	53	(40 - 103)
Phenol-d5	55	(36 - 105)
Nitrobenzene-d5	53	(45 - 114)
2-Fluorobiphenyl	64	(49 - 120)
2,4,6-Tribromophenol	66	(39 - 114)
Terphenyl-d14	58	(42 - 108)

(Continued on next page)

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC/MS Semivolatiles

Lot-Sample #....: F4I170267-001 Work Order #....: GQGF41AC Matrix.....: SOLID

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Estimated result. Result is less than RL.

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC Semivolatiles

Lot-Sample #...: F4I170267-001 Work Order #...: GQGF41AE Matrix.....: SOLID
 Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/20/04 Analysis Date...: 09/21/04
 Prep Batch #...: 4264277 Analysis Time...: 19:43
 Dilution Factor: 1
 % Moisture.....: 19 Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Heptachlor	ND	2.1	ug/kg
Heptachlor epoxide	ND	2.1	ug/kg
Toxaphene	ND	83	ug/kg
Aldrin	ND	2.1	ug/kg
alpha-BHC	ND	2.1	ug/kg
beta-BHC	ND	2.1	ug/kg
delta-BHC	ND	2.1	ug/kg
gamma-BHC (Lindane)	ND	2.1	ug/kg
4,4'-DDD	ND	2.1	ug/kg
4,4'-DDX	3.8	2.1	ug/kg
4,4'-DDT	ND	2.1	ug/kg
Dieldrin	2.4	2.1	ug/kg
Endosulfan I	ND	2.1	ug/kg
Endosulfan II	ND	2.1	ug/kg
Endosulfan sulfate	ND	2.1	ug/kg
Endrin	ND	2.1	ug/kg

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Tetrachloro-m-xylene	132 *	(54 - 120)
Decachlorobiphenyl	215 *	(41 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.
 Results and reporting limits have been adjusted for dry weight.

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC Semivolatiles

Lot-Sample #...: F4I170267-001 Work Order #...: GOGF42AE Matrix.....: SOLID
 Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/20/04 Analysis Date...: 09/22/04
 Prep Batch #...: 4264277 Analysis Time...: 14:16
 Dilution Factor: 10
 % Moisture.....: 19 Method.....: SW846 8081A

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Heptachlor	ND	21	ug/kg
Heptachlor epoxide	ND	21	ug/kg
Toxaphene	ND	830	ug/kg
Aldrin	ND	21	ug/kg
alpha-BHC	ND	21	ug/kg
beta-BHC	ND	21	ug/kg
delta-BHC	ND	21	ug/kg
gamma-BHC (Lindane)	ND	21	ug/kg
4,4'-DDD	ND	21	ug/kg
4,4'-DDE	ND	21	ug/kg
4,4'-DDT	ND	21	ug/kg
Dieldrin	ND	21	ug/kg
Endosulfan I	ND	21	ug/kg
Endosulfan II	ND	21	ug/kg
Endosulfan sulfate	ND	21	ug/kg
Endrin	ND	21	ug/kg

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Tetrachloro-m-xylene	0.0 DIL	(54 - 120)
Decachlorobiphenyl	0.0 DIL	(41 - 150)

NOTE(S):

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
 Results and reporting limits have been adjusted for dry weight.

INOUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

GC Semivolatiles

Lot-Sample #....: F4I170267-001 Work Order #....: GQGF41AD Matrix.....: SOLID
 Date Sampled....: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/20/04 Analysis Date...: 09/22/04
 Prep Batch #....: 4264378 Analysis Time...: 12:29
 Dilution Factor: 1
 % Moisture.....: 19 Method.....: SW846 8082

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Aroclor 1016	ND	41	ug/kg
Aroclor 1221	ND	41	ug/kg
Aroclor 1232	ND	41	ug/kg
Aroclor 1242	ND	41	ug/kg
Aroclor 1248	ND	41	ug/kg
Aroclor 1254	ND	41	ug/kg
Aroclor 1260	ND	41	ug/kg
Aroclor 1262	ND	41	ug/kg
Aroclor 1268	ND	41	ug/kg

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Decachlorobiphenyl	158 *	(10 - 150)

NOTE(S):

* Surrogate recovery is outside stated control limits.
 Results and reporting limits have been adjusted for dry weight.

INQUIP Associates, Inc.

Client Sample ID: SWTS 120,500ML BLACK

GC Semivolatiles

Lot-Sample #... F4I170267-001 **Work Order #...** GQGF41AF **Matrix.....:** SOLID
Date Sampled... 09/17/04 08:07 **Date Received...** 09/17/04
Prep Date.....: 09/20/04 **Analysis Date...** 09/22/04
Prep Batch #... 4264173 **Analysis Time...** 01:51
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8151A

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
2,4-D	ND	99	ug/kg
2,4-DB	ND	99	ug/kg
2,4,5-TP (Silvex)	ND	25	ug/kg
2,4,5-T	ND	25	ug/kg
Dalapon	ND	49	ug/kg
Dicamba	ND	49	ug/kg
Dichlorprop	ND	99	ug/kg
Dinoseb	ND	15	ug/kg
MCPA	ND	9900	ug/kg
MCPP	ND	9900	ug/kg

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2,4-Dichlorophenylacetic acid	79	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

INQUIP Associates, Inc.

Client Sample ID: EMIS 120,500ML BLACK

TOTAL Metals

Lot-Sample #...: F4I170267-001

Matrix.....: SOLID

Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04

% Moisture.....: 19

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 4264062						
Mercury	0.051	0.041	mg/kg	SW846 7471A	09/20/04	GQGF41AT
		Dilution Factor: 1		Analysis Time...: 15:05		
Prep Batch #...: 4265046						
Silver	ND	1.2	mg/kg	SW846 6010B	09/21/04	GQGF41AK
		Dilution Factor: 1		Analysis Time...: 21:24		
Arsenic	6.2	1.2	mg/kg	SW846 6010B	09/21/04	GQGF41AL
		Dilution Factor: 1		Analysis Time...: 21:24		
Barium	170 J	24.7	mg/kg	SW846 6010B	09/21/04	GQGF41AM
		Dilution Factor: 1		Analysis Time...: 21:24		
Cadmium	0.32 B,J	0.62	mg/kg	SW846 6010B	09/21/04	GQGF41AN
		Dilution Factor: 1		Analysis Time...: 21:24		
Chromium	11.8	1.2	mg/kg	SW846 6010B	09/21/04	GQGF41AP
		Dilution Factor: 1		Analysis Time...: 21:24		
Lead	18.1	0.62	mg/kg	SW846 6010B	09/21/04	GQGF41AQ
		Dilution Factor: 1		Analysis Time...: 21:24		
Selenium	ND	0.62	mg/kg	SW846 6010B	09/21/04	GQGF41AR
		Dilution Factor: 1		Analysis Time...: 21:24		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

INQUIP Associates, Inc.

Client Sample ID: EMTS 120,500ML BLACK

General Chemistry

Lot-Sample #....: F4I170267-001 Work Order #....: GQGF4 Matrix.....: SOLID
Date Sampled....: 09/17/04 08:07 Date Received...: 09/17/04
‡ Moisture.....: 19

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Cyanide, Total	ND	0.50	mg/kg	SW846 9012A	09/21-09/22/04	4267504
		Dilution Factor: 1		Analysis Time... 00:00		
Percent Moisture	19.1	0.10	‡	MCAW 160.3 MOD	09/18-09/20/04	4262019
		Dilution Factor: 1		Analysis Time... 00:00		

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #....: F4I170267 Work Order #....: GQGF41CH-MS Matrix.....: SOLID
 MS Lot-Sample #: F4I170267-001 GQGF41CJ-MSD
 Date Sampled....: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/21/04 Analysis Date...: 09/21/04
 Prep Batch #....: 4265463 Analysis Time...: 11:45
 Dilution Factor: 1 % Moisture.....: 19

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Chloromethane	22	(10 - 150)			SW846 8260B
	21	(10 - 150)	3.7	(0-30)	SW846 8260B
Vinyl chloride	35	(10 - 150)			SW846 8260B
	32	(10 - 150)	8.8	(0-30)	SW846 8260B
Bromomethane	45	(20 - 133)			SW846 8260B
	43	(20 - 133)	4.2	(0-30)	SW846 8260B
Chloroethane	60	(39 - 143)			SW846 8260B
	58	(39 - 143)	3.6	(0-30)	SW846 8260B
Acetone	193 a	(10 - 150)			SW846 8260B
	178 a	(10 - 150)	8.0	(0-30)	SW846 8260B
1,1-Dichloroethene	73	(60 - 133)			SW846 8260B
	72	(60 - 133)	1.0	(0-30)	SW846 8260B
Methylene chloride	108	(40 - 120)			SW846 8260B
	102	(40 - 120)	3.4	(0-30)	SW846 8260B
Carbon disulfide	59	(40 - 150)			SW846 8260B
	56	(40 - 150)	6.0	(0-30)	SW846 8260B
1,1-Dichloroethane	94	(76 - 126)			SW846 8260B
	91	(76 - 126)	3.1	(0-30)	SW846 8260B
2-Butanone	128	(31 - 150)			SW846 8260B
	126	(31 - 150)	0.96	(0-30)	SW846 8260B
1,2-Dichloroethene (total)	93	(77 - 128)			SW846 8260B
	89	(77 - 128)	4.2	(0-30)	SW846 8260B
Chloroform	101	(75 - 130)			SW846 8260B
	98	(75 - 130)	3.4	(0-30)	SW846 8260B
1,1,1-Trichloroethane	96	(68 - 130)			SW846 8260B
	93	(68 - 130)	3.2	(0-30)	SW846 8260B
Carbon tetrachloride	90	(65 - 131)			SW846 8260B
	86	(65 - 131)	4.4	(0-30)	SW846 8260B
1,2-Dichloroethane	104	(66 - 133)			SW846 8260B
	97	(66 - 133)	5.9	(0-30)	SW846 8260B
Benzene	90	(78 - 115)			SW846 8260B
	86	(78 - 115)	5.4	(0-30)	SW846 8260B
Trichloroethene	93	(20 - 150)			SW846 8260B
	89	(20 - 150)	3.6	(0-30)	SW846 8260B
1,2-Dichloropropane	97	(79 - 127)			SW846 8260B
	95	(79 - 127)	1.9	(0-30)	SW846 8260B
Bromodichloromethane	99	(74 - 128)			SW846 8260B
	94	(74 - 128)	5.0	(0-30)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F4I170267 Work Order #...: GQGF41CH-MS Matrix.....: SOLID
 MS Lot-Sample #: F4I170267-001 GQGF41CJ-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
4-Methyl-2-pentanone	81	(18 - 120)			SW846 8260B
	78	(18 - 120)	2.8	(0-30)	SW846 8260B
cis-1,3-Dichloropropene	87	(71 - 131)			SW846 8260B
	81	(71 - 131)	6.9	(0-30)	SW846 8260B
Toluene	106	(70 - 132)			SW846 8260B
	101	(70 - 132)	4.6	(0-30)	SW846 8260B
trans-1,3-Dichloropropene	126	(74 - 149)			SW846 8260B
	117	(74 - 149)	6.8	(0-30)	SW846 8260B
1,1,2-Trichloroethane	120	(63 - 149)			SW846 8260B
	113	(63 - 149)	5.8	(0-30)	SW846 8260B
2-Hexanone	123	(29 - 150)			SW846 8260B
	114	(29 - 150)	7.8	(0-30)	SW846 8260B
Tetrachloroethane	85	(40 - 143)			SW846 8260B
	81	(40 - 143)	4.7	(0-30)	SW846 8260B
Dibromochloromethane	113	(62 - 150)			SW846 8260B
	106	(62 - 150)	6.4	(0-30)	SW846 8260B
Chlorobenzene	97	(86 - 118)			SW846 8260B
	91	(86 - 118)	5.4	(0-30)	SW846 8260B
Ethylbenzene	94	(79 - 123)			SW846 8260B
	91	(79 - 123)	2.6	(0-30)	SW846 8260B
Styrene	84	(68 - 134)			SW846 8260B
	80	(68 - 134)	5.6	(0-30)	SW846 8260B
Bromoform	103	(59 - 161)			SW846 8260B
	98	(59 - 161)	5.0	(0-30)	SW846 8260B
1,1,2,2-Tetrachloroethane	94	(45 - 150)			SW846 8260B
	88	(45 - 150)	6.5	(0-30)	SW846 8260B
1,2-Dichlorobenzene	92	(80 - 125)			SW846 8260B
	85	(80 - 125)	7.8	(0-30)	SW846 8260B
m-Xylene & p-Xylene	94	(75 - 124)			SW846 8260B
	87	(75 - 124)	7.0	(0-30)	SW846 8260B
1,3-Dichlorobenzene	99	(84 - 120)			SW846 8260B
	92	(84 - 120)	6.6	(0-30)	SW846 8260B
o-Xylene	92	(75 - 129)			SW846 8260B
	88	(75 - 129)	4.6	(0-30)	SW846 8260B
1,4-Dichlorobenzene	95	(81 - 115)			SW846 8260B
	86	(81 - 115)	9.8	(0-30)	SW846 8260B
Bromobenzene	124	(72 - 150)			SW846 8260B
	125	(72 - 150)	7.1	(0-30)	SW846 8260B
Bromochloromethane	102	(65 - 143)			SW846 8260B
	99	(65 - 143)	2.9	(0-30)	SW846 8260B
n-Butylbenzene	69	(54 - 150)			SW846 8260B
	62	(54 - 150)	9.5	(0-30)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F4I170267 Work Order #...: GQGF41CH-MS Matrix.....: SOLID
 MS Lot-Sample #: F4I170267-001 GQGF41CJ-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
sec-Butylbenzene	84	(59 - 134)			SW846 8260B
	76	(59 - 134)	9.1	(0-30)	SW846 8260B
tert-Butylbenzene	88	(51 - 118)			SW846 8260B
	80	(51 - 118)	9.0	(0-30)	SW846 8260B
Allyl chloride	87	(58 - 131)			SW846 8260B
	82	(58 - 131)	5.4	(0-30)	SW846 8260B
2-Chlorotoluene	111	(10 - 150)			SW846 8260B
	107	(10 - 150)	3.4	(0-30)	SW846 8260B
4-Chlorotoluene	116	(72 - 144)			SW846 8260B
	119	(72 - 144)	2.6	(0-30)	SW846 8260B
Cyclohexanone	498 a	(10 - 150)			SW846 8260B
	487 a	(10 - 150)	2.0	(0-30)	SW846 8260B
1,2-Dibromo-3-chloropropane (DBCP)	145	(22 - 150)			SW846 8260B
	133	(22 - 150)	8.7	(0-30)	SW846 8260B
1,2-Dibromoethane (EDB)	121	(48 - 150)			SW846 8260B
	116	(48 - 150)	3.9	(0-30)	SW846 8260B
trans-1,4-Dichloro-2-butene	132	(65 - 135)			SW846 8260B
	122	(65 - 135)	7.5	(0-30)	SW846 8260B
Dichlorodifluoromethane (Freon 12)	5.6 a	(10 - 142)			SW846 8260B
	5.5 a	(10 - 142)	1.2	(0-30)	SW846 8260B
cis-1,2-Dichloroethene	97	(70 - 135)			SW846 8260B
	94	(70 - 135)	2.8	(0-30)	SW846 8260B
trans-1,2-Dichloroethene	89	(63 - 129)			SW846 8260B
	84	(63 - 129)	5.7	(0-30)	SW846 8260B
1,3-Dichloropropane	121	(41 - 150)			SW846 8260B
	115	(41 - 150)	4.7	(0-30)	SW846 8260B
2,2-Dichloropropane	97	(58 - 125)			SW846 8260B
	92	(58 - 125)	5.8	(0-30)	SW846 8260B
1,1-Dichloropropene	91	(68 - 130)			SW846 8260B
	88	(68 - 130)	3.4	(0-30)	SW846 8260B
Ethyl ether	93	(65 - 140)			SW846 8260B
	90	(65 - 140)	4.1	(0-30)	SW846 8260B
Ethyl methacrylate	35 a	(46 - 126)			SW846 8260B
	20 a,p	(46 - 126)	56	(0-30)	SW846 8260B
Freon 113	73	(59 - 139)			SW846 8260B
	70	(59 - 139)	4.3	(0-30)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F4I170267

Work Order #...: GQGF41CH-MS

Matrix.....: SOLID

MS Lot-Sample #: F4I170267-001

GQGF41CJ-MSD

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Hexachlorobutadiene	29	(24 - 150)			SW846 8260B
	27	(24 - 150)	4.4	(0-30)	SW846 8260B
n-Hexane	32	(32 - 133)			SW846 8260B
	31 a	(32 - 133)	4.2	(0-30)	SW846 8260B
Isopropylbenzene	89	(71 - 150)			SW846 8260B
	82	(71 - 150)	7.3	(0-30)	SW846 8260B
4-Isopropyltoluene	85	(64 - 149)			SW846 8260B
	74	(64 - 149)	13	(0-30)	SW846 8260B
Methyl methacrylate	180 a	(51 - 150)			SW846 8260B
	182 a	(51 - 150)	1.4	(0-30)	SW846 8260B
Methyl tert-butyl ether (MTBE)	101	(47 - 130)			SW846 8260B
	98	(47 - 130)	3.3	(0-30)	SW846 8260B
Naphthalene	51 a	(64 - 124)			SW846 8260B
	49 a	(64 - 124)	4.3	(0-30)	SW846 8260B
n-Propylbenzene	119	(73 - 138)			SW846 8260B
	109	(73 - 138)	8.4	(0-30)	SW846 8260B
1,1,1,2-Tetrachloroethane	102	(82 - 131)			SW846 8260B
	98	(82 - 131)	4.5	(0-30)	SW846 8260B
Tetrahydrofuran	109	(38 - 150)			SW846 8260B
	116	(38 - 150)	6.7	(0-30)	SW846 8260B
1,2,3-Trichlorobenzene	34	(26 - 146)			SW846 8260B
	31	(26 - 146)	7.6	(0-30)	SW846 8260B
1,2,4-Trichloro- benzene	41	(41 - 144)			SW846 8260B
	38 a	(41 - 144)	7.9	(0-30)	SW846 8260B
Trichlorofluoromethane	64	(50 - 130)			SW846 8260B
	62	(50 - 130)	2.9	(0-30)	SW846 8260B
1,3,5-Trimethylbenzene	114	(69 - 141)			SW846 8260B
	103	(69 - 141)	9.9	(0-30)	SW846 8260B
<u>SURROGATE</u>		<u>PERCENT RECOVERY</u>		<u>RECOVERY LIMITS</u>	
Toluene-d8		71 *		(80 - 130)	
		112		(80 - 130)	
Dibromofluoromethane		71 *		(78 - 130)	
		104		(78 - 130)	
1,2-Dichloroethane-d4		71 *		(72 - 134)	
		102		(72 - 134)	

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F4I170267 Work Order #...: GQGF41CH-MS Matrix.....: SOLID
MS Lot-Sample #: F4I170267-001 GQGF41CJ-MSD

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
4-Bromofluorobenzene	83	(68 - 150)
	133	(68 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

- a Spiked analyte recovery is outside stated control limits.
- p Relative percent difference (RPD) is outside stated control limits.
- * Surrogate recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F4I170267 Work Order #...: GQGF41AW-MS Matrix.....: SOLID
 MS Lot-Sample #: F4I170267-001 GQGF41AX-MSD
 Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/20/04 Analysis Date...: 09/21/04
 Prep Batch #...: 4264230 Analysis Time...: 20:10
 Dilution Factor: 1 % Moisture.....: 19

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	54	(41 - 97)			SW846 8270C
	61	(41 - 97)	11	(0-30)	SW846 8270C
bis(2-Chloroethyl)- ether	49	(38 - 98)			SW846 8270C
	59	(38 - 98)	18	(0-30)	SW846 8270C
2-Chlorophenol	53	(41 - 96)			SW846 8270C
	61	(41 - 96)	14	(0-30)	SW846 8270C
2-Methylphenol	55	(43 - 95)			SW846 8270C
	61	(43 - 95)	11	(0-30)	SW846 8270C
2,2'-oxybis(1-Chloropropa	47	(41 - 102)			SW846 8270C
	54	(41 - 102)	15	(0-30)	SW846 8270C
3-Methylphenol & 4-Methylphenol	61	(41 - 103)			SW846 8270C
	67	(41 - 103)	9.0	(0-30)	SW846 8270C
N-Nitrosodi-n-propyl- amine	53	(51 - 109)			SW846 8270C
	62	(51 - 109)	15	(0-30)	SW846 8270C
Hexachloroethane	44	(36 - 99)			SW846 8270C
	50	(36 - 99)	12	(0-30)	SW846 8270C
Nitrobenzene	44 a	(45 - 105)			SW846 8270C
	51	(45 - 105)	14	(0-30)	SW846 8270C
Isophorone	54	(47 - 117)			SW846 8270C
	62	(47 - 117)	14	(0-30)	SW846 8270C
2-Nitrophenol	52	(36 - 108)			SW846 8270C
	61	(36 - 108)	16	(0-30)	SW846 8270C
2,4-Dimethylphenol	57	(36 - 105)			SW846 8270C
	64	(36 - 105)	11	(0-30)	SW846 8270C
bis(2-Chloroethoxy) methane	53	(46 - 107)			SW846 8270C
	63	(46 - 107)	17	(0-30)	SW846 8270C
2,4-Dichlorophenol	58	(40 - 105)			SW846 8270C
	65	(40 - 105)	11	(0-30)	SW846 8270C
1,2,4-Trichloro- benzene	52	(44 - 102)			SW846 8270C
	61	(44 - 102)	16	(0-30)	SW846 8270C

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F4I170267

Work Order #...: GOGF41AW-MS

Matrix.....: SOLID

MS Lot-Sample #: F4I170267-001

GOGF41AX-MSD

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Naphthalene	52	(10 - 150)			SW846 8270C
	60	(10 - 150)	15	(0-30)	SW846 8270C
4-Chloroaniline	37	(11 - 99)			SW846 8270C
	41	(11 - 99)	12	(0-30)	SW846 8270C
Hexachlorobutadiene	52	(40 - 105)			SW846 8270C
	62	(40 - 105)	17	(0-30)	SW846 8270C
4-Chloro-3-methylphenol	59	(41 - 107)			SW846 8270C
	64	(41 - 107)	8.6	(0-30)	SW846 8270C
2-Methylnaphthalene	55	(35 - 118)			SW846 8270C
	61	(35 - 118)	10	(0-30)	SW846 8270C
Hexachlorocyclopenta- diene	28	(10 - 120)			SW846 8270C
	22	(10 - 120)	25	(0-30)	SW846 8270C
2,4,6-Trichloro- phenol	59	(40 - 105)			SW846 8270C
	64	(40 - 105)	9.0	(0-30)	SW846 8270C
2,4,5-Trichloro- phenol	60	(39 - 108)			SW846 8270C
	65	(39 - 108)	7.2	(0-30)	SW846 8270C
2-Nitroaniline	56	(42 - 114)			SW846 8270C
	60	(42 - 114)	6.0	(0-30)	SW846 8270C
Dimethyl phthalate	61	(46 - 110)			SW846 8270C
	66	(46 - 110)	7.8	(0-30)	SW846 8270C
Acenaphthylene	61	(48 - 110)			SW846 8270C
	67	(48 - 110)	8.8	(0-30)	SW846 8270C
2,6-Dinitrotoluene	61	(47 - 111)			SW846 8270C
	66	(47 - 111)	8.8	(0-30)	SW846 8270C
3-Nitroaniline	44	(23 - 102)			SW846 8270C
	47	(23 - 102)	8.1	(0-30)	SW846 8270C
Acenaphthene	59	(48 - 112)			SW846 8270C
	64	(48 - 112)	8.1	(0-30)	SW846 8270C
2,4-Dinitrophenol	36	(10 - 109)			SW846 8270C
	39	(10 - 109)	7.9	(0-30)	SW846 8270C
4-Nitrophenol	55	(33 - 114)			SW846 8270C
	59	(33 - 114)	8.0	(0-30)	SW846 8270C
Dibenzofuran	58	(46 - 107)			SW846 8270C
	62	(46 - 107)	7.4	(0-30)	SW846 8270C
2,4-Dinitrotoluene	61	(47 - 120)			SW846 8270C
	66	(47 - 120)	7.9	(0-30)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F4I170267

Work Order #...: GQGF41AW-MS

Matrix.....: SOLID

MS Lot-Sample #: F4I170267-001

GQGF41AX-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Diethyl phthalate	62	(46 - 115)			SW846 8270C
	66	(46 - 115)	7.3	(0-30)	SW846 8270C
Fluorene	60	(47 - 109)			SW846 8270C
	65	(47 - 109)	7.4	(0-30)	SW846 8270C
4-Chlorophenyl phenyl ether	60	(47 - 109)			SW846 8270C
	65	(47 - 109)	6.9	(0-30)	SW846 8270C
4-Nitroaniline	48	(21 - 116)			SW846 8270C
	54	(21 - 116)	11	(0-30)	SW846 8270C
4,6-Dinitro-2-methylphenol	39	(10 - 108)			SW846 8270C
	42	(10 - 108)	6.6	(0-30)	SW846 8270C
N-Nitrosodiphenylamine	62	(47 - 120)			SW846 8270C
	66	(47 - 120)	7.2	(0-30)	SW846 8270C
4-Bromophenyl phenyl ether	61	(46 - 110)			SW846 8270C
	66	(46 - 110)	7.0	(0-30)	SW846 8270C
Hexachlorobenzene	62	(48 - 115)			SW846 8270C
	67	(48 - 115)	7.5	(0-30)	SW846 8270C
Pentachlorophenol	50	(11 - 110)			SW846 8270C
	51	(11 - 110)	1.4	(0-30)	SW846 8270C
Phenanthrene	57	(39 - 122)			SW846 8270C
	61	(39 - 122)	6.3	(0-30)	SW846 8270C
Anthracene	56	(46 - 111)			SW846 8270C
	60	(46 - 111)	6.5	(0-30)	SW846 8270C
Carbazole	56	(41 - 112)			SW846 8270C
	60	(41 - 112)	7.0	(0-30)	SW846 8270C
Di-n-butyl phthalate	61	(45 - 114)			SW846 8270C
	65	(45 - 114)	6.0	(0-30)	SW846 8270C
Fluoranthene	59	(39 - 116)			SW846 8270C
	61	(39 - 116)	2.6	(0-30)	SW846 8270C
Pyrene	55	(41 - 121)			SW846 8270C
	60	(41 - 121)	7.8	(0-30)	SW846 8270C
Butyl benzyl phthalate	56	(44 - 121)			SW846 8270C
	60	(44 - 121)	7.9	(0-30)	SW846 8270C
Benzo (a) anthracene	62	(45 - 117)			SW846 8270C
	66	(45 - 117)	5.9	(0-30)	SW846 8270C
3,3'-Dichlorobenzidine	24	(10 - 116)			SW846 8270C
	28	(10 - 116)	14	(0-30)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: F4I170267

Work Order #...: GQGF41AW-MS

Matrix.....: SOLID

MS Lot-Sample #: F4I170267-001

GQGF41AX-MSD

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>
Chrysene	63	(43 - 119)			SW846 8270C
	66	(43 - 119)	4.5	(0-30)	SW846 8270C
bis(2-Ethylhexyl) phthalate	59	(43 - 118)			SW846 8270C
	63	(43 - 118)	5.5	(0-30)	SW846 8270C
Di-n-octyl phthalate	56	(35 - 120)			SW846 8270C
	62	(35 - 120)	8.7	(0-30)	SW846 8270C
Benzo (b) Fluoranthene	69	(39 - 124)			SW846 8270C
	75	(39 - 124)	7.0	(0-30)	SW846 8270C
Benzo (k) fluoranthene	57	(43 - 131)			SW846 8270C
	59	(43 - 131)	4.2	(0-30)	SW846 8270C
Benzo (a) pyrene	60	(43 - 114)			SW846 8270C
	63	(43 - 114)	5.2	(0-30)	SW846 8270C
Indeno (1,2,3-cd) pyrene	53	(31 - 129)			SW846 8270C
	58	(31 - 129)	7.6	(0-30)	SW846 8270C
Benzo (ghi) perylene	49	(26 - 140)			SW846 8270C
	54	(26 - 140)	9.1	(0-30)	SW846 8270C
Dibenzo (a,h) anthracene	52	(33 - 131)			SW846 8270C
	57	(33 - 131)	8.2	(0-30)	SW846 8270C

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
2-Fluorophenol	54	(40 - 103)
	61	(40 - 103)
Phenol-d5	54	(36 - 105)
	56	(36 - 105)
Nitrobenzene-d5	56	(45 - 114)
	63	(45 - 114)
2-Fluorobiphenyl	65	(49 - 120)
	68	(49 - 120)
2,4,6-Tribromophenol	65	(39 - 114)
	68	(39 - 114)
Terphenyl-d14	57	(42 - 108)
	59	(42 - 108)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: F4I170267 Work Order #...: GQGF41AU-MS Matrix.....: SOLID
 MS Lot-Sample #: F4I170267-001 GQGF41AV-MSD
 Date Sampled...: 09/17/04 08:07 Date Received...: 09/17/04
 Prep Date.....: 09/20/04 Analysis Date...: 09/22/04
 Prep Batch #...: 4264173 Analysis Time...: 02:55
 Dilution Factor: 1 % Moisture.....: 19

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2,4-D	72	(10 - 120)			SW846 8151A
	81	(10 - 120)	13	(0-30)	SW846 8151A
2,4-DB	78	(10 - 125)			SW846 8151A
	91	(10 - 125)	15	(0-30)	SW846 8151A
2,4,5-TP (Silvex)	82	(10 - 148)			SW846 8151A
	92	(10 - 148)	11	(0-30)	SW846 8151A
2,4,5-T	91	(10 - 131)			SW846 8151A
	109	(10 - 131)	18	(0-30)	SW846 8151A
Dalapon	68	(10 - 103)			SW846 8151A
	71	(10 - 103)	4.7	(0-30)	SW846 8151A
Dicamba	89	(16 - 137)			SW846 8151A
	99	(16 - 137)	11	(0-30)	SW846 8151A
Dichlorprop	91	(23 - 121)			SW846 8151A
	102	(23 - 121)	12	(0-30)	SW846 8151A
Dinoseb	17	(10 - 110)			SW846 8151A
	27 p	(10 - 110)	44	(0-30)	SW846 8151A

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4-Dichlorophenylacetic acid	82	(19 - 122)
	92	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

p Relative percent difference (RPD) is outside stated control limits.